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The Use of Xylazine Hydrochloride in Free Roaming and Wild Mammals

by
Jan Whitlock*

The capture, taming and handling of free roaming and captive wild mammals involves a danger to both animal and human involved. As a result this area of veterinary medicine is often neglected. It is therefore important that drugs be found that can assist in handling animals that are not accustomed to being handled. Xylazine hydrochloride[a] is such a drug.

Xylazine hydrochloride (Xylazine 2(2,6-Dimethyl-phenylamino)-4H-5,6-dihydro-1,3 thiazine hydrochloride) is a nonnarcotic compound with analgesic, central nervous depressant and muscle relaxant action.[1] It has cholinergic and adrenergic activity very similar in effect to morphine.[2] It is available in an acid solution for intramuscular or intravenous administration and is stable under normal storage conditions. Xylazine is recommended for use in horses and is available for use in that species in a solution containing 100 mg. of xylazine per each ml.[1]

The plane of unconsciousness with xylazine is very much dose dependent. At a very low dosage range the animal may be easily aroused and struggle or regain its feet upon physical contact or loud noise. At higher dosage analgesia is adequate to allow minor surgery. It is therefore important that the proper dose is used and that the animal remain undisturbed until the proper plane of unconsciousness is reached. Some dose variation has been found between species of wild mammals and some individual differences in tolerance have been found within species.[2]

Some investigators were concerned by the slow, shallow breathing of patients caused by xylazine, but this has caused little trouble. At first Doxapram hydrochloride was injected to stimulate respiration but was found to be unnecessary. Some cases of prolonged immobilization have been reported but in all cases recovery was complete with no long range effect. Still other animals required some physical restraint on recovery because they rose to their feet and walked on their rear pasterns, with their rear feet completely turned under. With restraint this condition completely abated.[2]

Xylazine hydrochloride has been administered by both manual injection, 2% or 10% solution, and by projectile dart syringe, 20%–25% of the active compound.[4] In the study by Young and Whyte xylazine was found to have rapid onset of action, a wide margin of safety of up to ten times, absence of an excitement phase during induction and recovery, and a good potentiating effect on etorphine hydrochloride, fentanyl and phencyclidine hydrochloride. Along with this potentiating effect, xylazine counteracts the muscle spasticity and convulsion which sometimes occurs with phencyclidine in some animals. There is no antidote for xylazine hydrochloride. As a result its use in conjunction with other drugs that have known antidotes becomes very important when dealing with free roaming wild mammals that must regain consciousness rapidly to survive.

The following dosages of xylazine are those published by Young and Whyte to immobilize animals with xylazine or xylazine in combination with etorphine or phencyclidine:[4]

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†Rompun, Chemagro Division of Baychem Corporation, Kansas City, Mo.

Lion: 0.5–0.7mg/kg xylazine or 0.5mg/kg with phencyclidine
Hyaena: 1mg/kg or 1mg/kg with phencyclidine
Impala: 0.87–8.37mg/kg or 0.4–0.5mg with etorphine for adult animal
Buffalo: 0.20–1.25mg/kg or 5mg with etorphine for adult wild bull
Eland: 0.6mg/kg or 4–5mg with etorphine for adult wild animal
Kudu: 0.7mg/kg or 3–4mg with etorphine for adult wild animal

The duration of action of xylazine is dose dependent. Recovery is usually smooth but the animals can react to loud noise and physical contact by regaining consciousness and their feet too soon. So they should be left alone and in a quiet place with no disturbances.

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Recognition of the Proper Shoeing of the Normal Working Horse

by
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Introduction

Horseshoeing is a vast and complex art and science, and it has many areas which will not be discussed here. Rather, I will limit this discussion to the proper shoeing of the normal working horse. The average Quarter Horse with a sound healthy foot will be considered the normal working horse for the purposes of this article. It must be remembered that horses with gait or conformation problems will be shod as variations to the normal.

Purpose of the Shoes

Why shoe a normal healthy horse? The horse has been bred and used over the years in an environment artificially created by man. Gravel roads and show arenas are very traumatic to the hoof. Coupled with this unnatural trauma, man has selectively bred for the smaller, more refined hoof, which is less durable. Consequently the horse is less able to withstand a rigorous program of use. To enable the horse to remain usable over a season, the shoe is used to give resistance to the hoof. Thus the purpose of shoeing a normal working horse is aimed at increased durability without the loss of natural mobility.

The Shoes

The primary consideration for the working horse is the angle and the balance of the hoof. The "way of going" is only important as it relates to the athletic ability of the working animal. A close analogy is the tennis shoe that we wear. A good fitting tennis shoe is an asset to an athlete, while an improperly fit shoe is a detriment.

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